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10/811,306	03/29/2004	Masumi Kubo	1035-503	9652

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EXAMINER

ZUBAJLO, JENNIFER L

ART UNIT	PAPER NUMBER
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2609

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/811,306

Applicant(s)

KUBO, MASUMI

Examiner

Jennifer Zubajlo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/16/2004 and 5/15/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Donald E. Mosier (Patent Number: 5,489,918), hereinafter Mosier.

3. As to claim 1, Mosier teaches:

A liquid crystal display device comprising: a liquid crystal panel (see Abstract), when both of transmittance at the front and transmittance at an oblique viewing angle are 1 in white display (column 10 lines 58-66 and column 11 lines 1-6), having such display characteristics that transmission intensity at the oblique viewing angle is larger than transmission intensity (brightness) at the front (see column 10 lines 49-66, column 11 lines 1-23 and 45-65, and column 12 lines 1-11); and a drive voltage setting section which sets a drive voltage to drive the liquid crystal panel and supplies the set drive voltage to the liquid crystal panel, wherein: the drive voltage setting section sets a drive voltage in accordance with viewing angle characteristics of the liquid crystal panel, thereby controlling viewing angle characteristics (see Abstract, column 7 lines 8-19, column 10 lines 49-66, column 11 lines 1-23 and 45-65, and column 12 lines 1-11).

For claim 2 (dependent on claim 1), note column 25 lines 7-20 teach a drive voltage for a lower end of grayscale to be supplied to the liquid crystal panel with narrow viewing angle characteristics so as to be higher than a drive voltage for a lower end of grayscale to be supplied to the liquid crystal panel with wide viewing angle characteristics.

For claim 3 (dependent on claim 1), note column 6 lines 66-67, column 7 lines 1-7, and column 25 lines 7-20, 44-60 teach a drive voltage for a higher end of grayscale to be supplied to the liquid crystal panel, so as to be a voltage on which grayscale degradation occurs at the oblique viewing angle.

For claim 4 (dependent on claim 1), note column 6 lines 66-67, column 7 lines 1-7, column 25 lines 7-20, 44-60, 66-67 and column 26 lines 1-5, 17-21, 58-63 teach the drive voltage setting section, when transmission intensity of the liquid crystal panel has such a magnitude that grayscale inversions occur on a higher end of grayscale at the oblique viewing angle, sets a drive voltage for a higher end of grayscale to be supplied to the liquid crystal panel with wide viewing angle characteristics to be a voltage on which no grayscale degradation occurs at the oblique viewing angle.

For claim 5 (dependent on claim 4), note column 26 lines 25-34 teach the drive voltage setting section does not change a drive voltage for a lower end of grayscale to be supplied to the liquid crystal panel.

For claim 6 (dependent on claim 1), note column 14 lines 16-29, 44-57, column 15 lines 16-19, 32-34, 39-41, 52-65, column 16 lines 37-45, and column 26 lines 37-54 teach the drive voltage setting section sets a drive voltage with reference to a lookup

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table (in this case a graph/wave form), set in advance, representing a relationship between an input grayscale level and a drive voltage.

For claim 7 (dependent on claim 6), note column 7 lines 8-39 and column 14 lines 44-57 teach the lookup table (wave form/graph) is set for each type of viewing angle characteristics, and the drive voltage setting section selects a lookup table corresponding to viewing angle characteristics.

For claim 8 (dependent on claim 1), note column 14 lines 16-29, column 15 lines 10-15, 32-42, column 16 lines 37-45, column 17 lines 50-57, 66-67, and column 18 lines 1-8 teach a drive voltage in accordance with a program (set of instructions), set in advance, for determining an output grayscale level with respect to an input grayscale level.

For claim 9 (dependent on claim 8), note column 7 lines 35-40, column 18 lines 3-8, column 19 lines 66-67, and column 20 lines 1-19, 60-65 teach the program set for each type of viewing angle characteristic, and the drive voltage setting section selects and executes a program corresponding to viewing angle characteristics.

4. As to claim 14, Mosier teaches:

An electronic device including a liquid crystal display device, the liquid crystal display device comprising: a liquid crystal panel (see Abstract), when both of transmittance at the front and transmittance at an oblique viewing angle are 1 in white display (column 10 lines 58-66 and column 11 lines 1-6), having such display characteristics that transmission intensity (brightness) at the oblique viewing angle is larger than transmission intensity at the front (see column 10 lines 49-66, column 11 lines 1-23 and

45-65, and column 12 lines 1-11); and a drive voltage setting section which sets a drive voltage to drive the liquid crystal panel and supplies the set drive voltage to the liquid crystal panel, wherein: the drive voltage setting section sets a drive voltage in accordance with viewing angle characteristics of the liquid crystal panel, thereby controlling viewing angle characteristics (see Abstract, column 7 lines 8-19, column 10 lines 49-66, column 11 lines 1-23 and 45-65, and column 12 lines 1-11).

5. As to claim 15, Mosier teaches:

An electronic device capable of performing at least two types of functions among the following functions: electronic messaging, camera shooting, Internet access, and television reception (see column 2 lines 11-27, 62-63, column 9 lines 49-52, column 19 lines 33-34, and column 20 lines 60-65), and including a liquid crystal display device displaying a state of performing the function during performance of each of the functions, the liquid crystal display device comprising: a liquid crystal panel (see Abstract), when both of transmittance at the front and transmittance at an oblique viewing angle are 1 in white display (column 10 lines 58-66 and column 11 lines 1-6), having such display characteristics that transmission intensity (brightness) at the oblique viewing angle is larger than transmission intensity at the front (see column 10 lines 49-66, column 11 lines 1-23 and 45-65, and column 12 lines 1-11); and a drive voltage setting section which sets a drive voltage to drive the liquid crystal panel and supplies the set drive voltage to the liquid crystal panel, wherein: the drive voltage setting section sets a drive voltage in accordance with viewing angle characteristics of the liquid crystal panel, thereby controlling viewing angle characteristics (see Abstract,

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column 7 lines 8-19, column 10 lines 49-66, column 11 lines 1-23 and 45-65, and column 12 lines 1-11).

For claim 16 (dependent on claim 15), note column 14 lines 16-29, column 15 lines 10-15, 32-42, and column 16 lines 37-45 teach the drive voltage corresponding to the function to be performed is set in advance.

For claim 17 (dependent on claim 15), note column 17 lines 50-57, column 19 lines 31-34, column 20 lines 53-60, and column 25 lines 7-20 teach the drive voltage in accordance with a switching signal for switching between wide viewing angle characteristics and narrow viewing angle characteristics.

For claim 18 (dependent on claim 15), note Abstract, column 7 lines 8-19, column 10 lines 49-66, column 11 lines 1-23 and 45-65, column 12 lines 1-11, and column 25 lines 7-20 teach under a circumstance where the drive voltage is set to a drive voltage for wide viewing angle characteristics, sets a drive voltage which is to be applied to an arbitrary part of the liquid crystal panel, so as to be a drive voltage for narrow viewing angle characteristics.

For claim 18 (dependent on claim 15), note Abstract, column 7 lines 8-19, column 10 lines 49-66, column 11 lines 1-23 and 45-65, column 12 lines 1-11, and column 25 lines 7-20 teach under a circumstance where the drive voltage is set to a drive voltage for narrow viewing angle characteristics, sets a drive voltage which is to be applied to an arbitrary part of the liquid crystal panel, so as to be a drive voltage for wide viewing angle characteristics.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donald E. Mosier (Patent Number: 5,489,918) in view of Inoue et al. (Patent No.: 6,850,309 B2), hereinafter Inoue.

Mosier teaches the limitations of claim 1 as described above.

Mosier doesn't teach a display mode of the liquid crystal panel is VA (Vertically Aligned) mode, CPA (Continuous Pinwheel Alignment) mode, or MVA (Multi-Domain Vertically Aligned) mode.

Inoue teaches a display mode of a liquid crystal panel is VA (Vertically Aligned) mode, CPA (Continuous Pinwheel Alignment) mode, and MVA (Multi-Domain Vertically Aligned) mode (see column 1 lines 28-42, column 3 lines 56-59, and column 10 lines 21-28). All of these modes are vertically aligned modes.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Mosier with the display modes taught by Inoue because LCD's operating in vertically aligned modes have wider viewing angle characteristics (improved in viewing angle characteristics).

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8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donald E. Mosier (Patent Number: 5,489,918) in view of Tadashi Matsuzawa (Pub. No.: US 2002/0001060 A1), hereinafter Matsuzawa.

Mosier teaches the limitations of claim 1 as described above.

Mosier doesn't teach a display mode of the liquid crystal panel is RTN (Reverse Twisted Nematic) mode.

Matsuzawa teaches a display mode of the liquid crystal panel is RTN (Reverse Twisted Nematic) mode (see [0004]). Reverse twisted nematic mode is also a vertically aligned mode.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Mosier with the reverse twisted nematic mode taught by Matsuzawa because LCD's operating in vertically aligned modes have wider viewing angle characteristics (improved in viewing angle characteristics).

9. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donald E. Mosier (Patent Number: 5,489,918), hereinafter Mosier.

As to claims 20 and 21, Mosier teaches the limitations of claim 15 as described above and also teaches the drive voltage setting section, in performing the Internet access and electronic messaging, sets the drive voltage corresponding to narrow viewing angle characteristics (see column 12 lines 1-11). Mosier does not directly teach Internet access or electronic messaging however it is taught that the invention can be applicable to a variety of different uses and types of LCD's (see column 9 lines

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49-50) and an example used uses a personal computer (see column 20 lines 60-65) which is well known to have Internet capabilities and electronic messaging.

As to claim 22, Mosier teaches the limitations of claim 15 as described above and also teaches the drive voltage setting section, in performing the camera shooting, sets the drive voltage corresponding to wide viewing angle characteristics (see column 12 lines 1-11). Mosier does not directly teach Internet access or electronic messaging however it is taught that the invention can be applicable to a variety of different uses and types of LCD's (see column 9 lines 49-50) and it is well known that camera shooting is a common function for use with LCD's.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Patent Number: US 6,693,693 B1, Patent Number: US 6,777,884 B1, Patent Number: 6,417,966 B1, and Patent Number: 5,612,801.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Zubajlo whose telephone number is (571) 272-2222. The examiner can normally be reached on Monday-Friday, 8 am - 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 270-1550. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer Zubajlo


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SUPERVISORY PATENT EXAMINER